

CLAIMS:

1. An external rotor brushless DC motor comprising:
a stator assembly base having a base plate;
a winding assembly affixed to the stator assembly base; and
circuitry associated with the motor, wherein the base plate is disposed between the circuitry and the winding assembly and is provided with a cover to define an enclosure, the circuitry being located between the base plate and the cover within the enclosure which is hermetically sealed.
2. A motor according to Claim 1, wherein the circuitry is attached to or supported by the base plate.
3. A motor according to Claim 1, wherein the heat generating components of the circuitry are attached to the base plate.
4. A motor according to any preceding claim, wherein the base plate comprises a base plate having a side wall, the side wall defining a recess within which the circuitry is located.
5. A motor according to any preceding claim, wherein the stator assembly base include means for supporting the winding assembly.
6. A motor according to any preceding claim, wherein the stator assembly base is manufactured from aluminium or other thermally conductive material.
7. A motor according to any preceding claim, wherein the circuitry is in the form of a printed circuit board having a plurality of components mounted thereon.

8. A motor according to Claim 10, wherein some or all of the components on the printed circuit board are positioned on the opposite surface of the printed circuit board to that adjacent the base plate.
9. A motor according to Claim 10, wherein some or all of the components are positioned on the surface of the printed circuit board adjacent the base plate.
10. A motor according to Claim 10, wherein the components are positioned on both surfaces of the printed circuit board.
11. A motor according to any preceding claim, wherein high heat generating components overhang the edge of the printed circuit board and attach directly to the base plate hence conducting heat away from the component into the base plate.
12. A motor according to any preceding claim, wherein high heat generating components are located proximal an aperture in the printed circuit board, a projection from the base plate contacting at least one component through the aperture to conduct heat away from the component into the base plate.
13. A motor according to any preceding claim, wherein the winding assembly comprises a number of multipole stator laminations with windings.
14. A fan incorporating a motor according to any preceding claim.
15. A fan according to Claim 17 having a frame, wherein the frame is manufactured from a plastics material.
16. A fan according to Claim 17 or 18, wherein the motor has a cover plate and the cover plate comprises a part of the fan housing.

17. A fan having a frame manufactured from a plastics material and, incorporating an external rotor brushless DC motor, the motor comprising:
- a stator assembly base having a base plate;
 - the stator assembly base being manufactured from a thermally conductive material;
 - a winding assembly affixed to the stator assembly base; and
 - circuitry associated with the motor, wherein the base plate is disposed between the circuitry and the winding assembly, and has a side wall depending away from the winding assembly, the side wall being within the air flow generated, in use, by the fan and comprising part of a heat transfer path to dissipate heat away from the motor.
18. A fan according to Claim 17, wherein the circuitry is attached to or supported by the base plate.
19. A fan according to Claim 17, wherein the heat generating components of the circuitry are attached to the base plate.
20. A fan according to any one of Claims 17 to 19, wherein the side wall defines a recess within which the circuitry is located.
21. A fan according to any one of Claims 17 to 20, wherein the base plate is provided with a cover, the circuitry being located between the base plate and the cover.
22. A fan according to any one of Claims 17 to 21, wherein the circuitry is housed within an enclosure.

23. A fan according to Claim 22, wherein the enclosure is hermetically sealed.
24. A fan according to any one of Claims 17 to 23, wherein the stator assembly base include means for supporting the winding assembly.
25. A fan according to any one of Claims 17 to 24, wherein the circuitry is in the form of a printed circuit board having a plurality of components mounted thereon.
26. A fan according to Claim 25, wherein some or all of the components on the printed circuit board are positioned on the opposite surface of the printed circuit board to that adjacent the base plate.
27. A fan according to Claim 25, wherein some or all of the components are positioned on the surface of the printed circuit board adjacent the base plate.
28. A fan according to Claim 25, wherein the components are positioned on both surfaces of the printed circuit board.
29. A fan according to any one of Claims 17 to 28, wherein high heat generating components overhang the edge of the printed circuit board and attach directly to the base plate hence conducting heat away from the component into the base plate.
30. A fan according to any one of Claims 17 to 29, wherein high heat generating components are located proximal an aperture in the printed circuit board, a projection from the base plate contacting at least one component through the aperture to conduct heat away from the component into the base plate.

Printed: 28-12-2001

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31. A fan according to any one of Claims 17 to 30, wherein the winding assembly comprises a number of multipole stator laminations with windings.
32. A fan according to any one of Claims 17 to 31, wherein the motor has a cover plate and the cover plate comprises a part of the fan housing.

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